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27K4018
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UNITED STATES DEPARTMENT OF AGRICULTURE
Rural Electrification Administration
Technical Standards Committee "A"

Supplement No. 1, October 1985, to
REA Bulletin 43-5, List of
Materials Acceptable for Use on
Systems of REA Electrification Borrowers

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The attached pages for the "List of Materials Acceptable for Use on Systems of REA Electrification Borrowers" are those which have been revised by action of the Technical Standards Committees during the months of July through September 1985. The following changes should be made in order to keep it up to date. Pages with a comma between are on the same sheet, both being changed.

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c, d	c, d	ga-1	ga-1
k(3.1) Cond.	k(3.1) Cond.	sd	sd
m-2, n	m-2, n	sd Cond., se	sd Cond., se
p(1) Cond.	p(1) Cond.	se Cond.	se Cond.
w	w	zz-3	zz-3
an(3.1) Cond.	an(3.1) Cond	Uae(1) Cond.	Uae(1) Cond.
av-2	av-2	Ugk(1.1) Cond.	Ugk(1.1) Cond.
av-4	av-4	Ugp-1, Ugp-2	Ugp-1, Ugp-2
av-5	av-5	Uhp(4) Cond.	Uhp(4) Cond.
du	du	Uhv-1, Uhv-2	Uhv-1, Uhv-2
eq(4) Cond.		Uhv-3, Uhv-4	Uhv-3, Uhv-4
eu	eu	Uhv-5, Uhv(1) Cond.	Uhv-5, Uhv(1) Cond.
fm	fm	Uhy(1.1) Cond.	Uhy(1.1) Cond.
fn	fn		

c - Bolt, machine

Applicable Specification: ANSI C135.1,
"Standards for
Galvanized Steel Bolts and
Nuts" except that the lengths
are in the ranges given below.

Applicable Sizes : 1/2 inch diameter, 6 through
10 inch length

5/8 inch diameter, 6 through
24 inch length

3/4 inch diameter, 6 through
26 inch length

7/8 inch diameter, 6 through
28 inch length

The following manufacturers have shown compliance with the applicable
specifications for machine bolts:

A. B. Chance Company
Dixie Electrical Manufacturing Company
Hughes Brothers
*Joslyn Manufacturing Company
Kortick Manufacturing Company
*McGraw-Edison
*Portland Bolt & Manufacturing Company
Power Line Hardware
Steel City Bolt & Screw Co., Inc.
Utilities Service Company

*"Static proof" design available.

d
Oct. 1985

d - Washers
FLAT ROLLED STEEL

Size, inches:	2-1/4x2-1/4	3 x 3	4 x 4	4 x 4	1-3/8 round	1-3/4 round
Thickness, in.:	3/16	1/4	3/16	1/2	12 gauge	10 gauge
Hole Diam., in.	13/16	13/16	13/16	13/16	9/16	11/16
C & C Spacer	4					
Chance	6814	6817	6818	6819-1/2	6803	6805
Dixie	D6814	D6817	D6818	D6819-1/2	D6803	-
Hughes	SW2-70	SW3-70	SW4-70	SW4-70(1/2)	RW1-3/8-50	-
Joslyn	J1076	J22596	J1080	J1473	J1086	J1088
Kortick	K1553	K1555	K1557	K1559-1/2	K1524	K1525
McGraw-Edison	DF2W5	DF2W7	DF2W10	DF2W15	DF1W2	DF1W3
Power Line Hardware	SWF225A	SWF33B	SWF44A	-	-	-
Utilities Service	5485	5487A	5488	5490A	5478	5479

CURVED CAST

Size, inches:	2-1/4x2-1/4	3 x 3	3 x 4	4 x 4	
Thickness, in.:	1/4	5/16	7/16	1/2	
Hole Diam., in.:	11/16	11/16	15/16	13/16	
Barron Bethea (N)	GCW-1A	GCW-31	CRW-4A	GCW-41	-
Bethea Metals (A)	AWC-22-5	AWC-33-5	AWC-34-7	AWC-44-6	-
Bethea Electrical (A)	-	WC-33-5	WC-34-7	WC-44-6	
Continental (N)	-	CW-33-5	CW-34-7	CW-44-6	
Flagg (MIF)(M)	P141	P143	P120	P144	
Power Line Hardware (M)	CSW-33	CRW-34	CSW-44		
Universal Electric (A)	UW-225	UW-335	UW-347	UW-446	

CURVED ROLLED STEEL

Joslyn (Steel)

J114

FLAT CAST

Barron Bethea (N) BB-214
Flagg (MIF) (N) P56A

SPURRED

3" Round, 3/16" Thick, 13/16" Hole

Continental (N) TCSF-30-6
Flagg (MIF) (M) PX159A

(A) Aluminum Alloy
(M) Malleable Iron
(N) Nodular Iron

k - Insulator, Distribution Deadend

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
<u>Chance</u>		
Distribution deadend	965	1. To obtain experience
Catalog No. C654-0000	4/22/71	
"Epoxilator II"		2. For use as deadends on
(15 kV line-to-line)	1082	distribution lines only
Catalog No. C654-2500	1/22/76	
"Epoxilator II"	1129	3. Recommended maximum
(25 kV line-to-line)	12/15/77	working load is 5,000 lbs.
		4. Not recommended for use in areas subject to contamination.
<u>Joslyn</u>		
Distribution deadend	1074	For use as deadends on
UDI 671-3002	9/25/75	distribution lines only
	1088	up to 15 kV line-to-
Distribution deadend	4/15/76	line voltage.
UDI 671-3010	1074	
	9/25/75	For use as deadends on
	1088	distribution lines only
	4/15/76	up to 25 kV line-to-
		line voltage.
<u>Lapp</u>		
Distribution deadend	1282	
Catalog No. 151001, 15 kV	6/21/84	
Catalog No. 151002, 25 kV		
		Same as Chance
<u>Plastigage</u>		
Distribution deadend	1158	1. To obtain experience
H-15 kV-4	3/1/79	
H-25 kV-6	1208	2. For use as deadends on
	3/19/81	distribution lines only
		4. Not recommended for use in areas subject to contamination.

NOTE: When insulators from this page are used, adjust construction
drawing material list quantities as necessary.

Conditional List
k(3.1)
Oct. 1985

k - Insulator, Distribution Deadend

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
<u>Salisbury</u>		
Distribution deadend	1226 (1/7/82)	Same as Chance [See Cond. k(3)]
9501 Series, 15 kV	1304 (8/8/85)	
9575 Series, 25 kV	1291 (12/20/84)	
<u>Sediver</u>		
Distribution deadend	1286	Same as Chance [See Cond. k(3)]
ADI-4 15 kV	9/6/84	
ADI-6 25 kV		

NOTE: When insulators from this page are used, adjust construction drawing material list quantities as necessary.

m - Clamp, Suspension

ANGLE - DISTRIBUTION
No. 2 & 4 ACSR
Plus Rods

2-BOLT TRANSMISSION
For 3/8" Steel Overhead
Ground Wire

AAC-68-90	Anderson/Square D	MS-46-N
-	Barron Bethea	FGW-1
RALS-1	Bethea Electrical	FS-46-N
AC-75	Continental	FSC-46N
GD-907A	Fargo	-
2300	Brown Boveri Electric	6240
2300	Joslyn (Brewer-Titchener)	6240
2300	Knox	6240A-U
306092	Lapp	305740N
82860	Ohio Brass	83044
AC-60	Power Line Hardware	-

n
Oct. 1985

n - Bolt, double arming

Applicable Specification: ANSI C 135.1, "Standards for Galvanized Steel Bolts and Nuts."

Applicable Sizes : 5/8 inch diameter, 12 inch through 24 inch length

3/4 inch diameter, 20 inch through 24 inch length

The following manufacturers have shown compliance with the applicable specifications for double arming bolts:

A. B. Chance Company
Dixie Electrical Manufacturing Company
Hughes Brothers
*Joslyn Manufacturing and Supply Company
Kortick Manufacturing Company
*McGraw-Edison
Portland Bolt & Manufacturing Company
Power Line Hardware
Steel City Bolt & Screw Co., Inc.
Utilities Service Company



*"Static proof" designs available.

p - Connectors

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
<u>Anderson/Square D</u> Compression al to al al to cu "Versa-Crimp" L tap.	748 11/1/62	To obtain experience
Parallel groove, aluminum LC-52C (1/0 - 6/1 ACSR over armor rods) LC-51C (1/0 - 6/1 ACSR)	738 6/21/62	" " "
<u>Burndy</u> Compression, insulated "Insul ink"	672 8/6/59	" " "
<u>Blackburn</u> Compression, insulated service entrance con- nectors, Types ICS-1 and IKL	1027 10/11/73 1133 2/16/78	" " "
<u>Homac</u> Compression, Insulated "Shure Splicers" Types Q1N and U1N	1074 9/25/75 1269 11/17/83	" " "
<u>Kupler</u> Bolted, insulated 130001 (#2-1/0 run, #2 tap) 130003 (1/0-4/0 run, #2-1/0 tap) 130004 (1/0-4/0 run, 1/0-4/0 tap)	1306 9/26/85	1. For use on 600 volt maximum insulated conductors. 2. To be used only for connecting service drop conductors to service entrance conductors. 3. To obtain experience.
<u>Penn Union</u> Compression, Insulated Type PIK	866 2/8/68	To obtain experience.
<u>Utilco</u> Two bolt style, al to al Type PM	1053 11/14/74	" " "

q
July 1985

q - bolt, double upset



Applicable Specification: "REA Specifications for Single and Double Upset Spool Bolts," D-5

Diameter, inches	<u>5/8</u>	<u>5/8</u>	<u>5/8</u>	<u>5/8</u>
Length, inches	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Chance	-	7826	7828	7830
Dixie	D7824	D7826	D7828	D7830
Joslyn	-	J2394	J2395	J2396
Kortick	K4760	K4761	K4762	K4763
McGraw-Edison*	DC3E15	DC3E11	DC3E12	DC3E13
Utilities Service	31065	31067	31069	31071

*Static proof" designs available.

w
Oct. 1985

w - Insulators, guy strain
(Fiber Reinforced Plastic)

Ult. Strength, pounds	11,000	15,000	21,000
<u>Barron Bethea</u>	BB-11-CC Series	BB-15-CC Series	BB-21-CC Series
<u>Bethea Elec- trical Products</u>	FGS16 Series	FGS16 Series	FGS21 Series
<u>Continental</u>	G-11 Series	G-15 Series	G-21 Series
<u>Flagg (MIF)</u>	150 Series	150 Series	210 Series
<u>Joslyn-Empire</u>	400 Series	500 Series	650 Series
<u>Kearney</u>	-	321015	321021
<u>McGraw-Edison</u>	-	DEG 15 Series	DEG 30 Series
<u>Plastigage</u>	HSI1-1P Series	HSI-2X Series	HSI3-1P Series
<u>Hughes Brothers</u>	-	692 Series	694 Series

x
July 1985

x - Rod, anchor

Applicable Specification: ANSI C135.2, "Standards for
Galvanized Ferrous Strand
Eye Anchor Rods."

Applicable Sizes: Single guy - 5/8 inch diam. 6, 7 and 8 feet long
- 3/4 inch diam. 8, 9 and 10 feet long
- 1 inch diam. 9 and 10 feet long

Double guy - 5/8 inch diam. 7 and 8 feet long
- 3/4 inch diam. 8, 9 and 10 feet long
- 1 inch diam. 9 and 10 feet long

Single Guy Drive - 5/8 inch diam. 7 and 8 feet long
- 3/4 inch diam. 8, 9 and 10 feet long
- 1 inch diam. 9 and 10 feet long

Double Guy Drive - 5/8 inch diam. 7 and 8 feet long
- 3/4 inch diam. 8, 9 and 10 feet long
- 1 inch diam. 9 and 10 feet long

The following manufacturers have shown compliance with the applicable specifications. Some manufacturers cannot supply all sizes listed above. Check with manufacturer or distributor for availability.

Blackburn
Chance
Dixie
Grip-Tite

Joslyn
Kortick
McGraw-Edison
Utilities Service



Condition of Acceptance: To obtain experience.

Conditional List
an (2.2)
July 1985

Conditional List
an (3.1)
Oct. 1985

an - Transformers, Power
Three-Phase, Step-Down
for Distribution Substation Use

Condition of Acceptance: To obtain experience.

Primary Voltage-kV	750	1000	1500	KVA 2000	2500	3750	5	7.5	10	12	15	20	25	30
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ASEA Electric

115
138

S S S

Transformers 5 MVA and larger also accepted as load tap changing transformers using ASEA Electric Type UZD load tap changers.

Central Moloney

34.4

S

Federal Pacific

34.4
67.0

S S S
S S

Transformers 5 MVA and larger also accepted as load tap changing transformers using Federal Pacific Type TC-525 load tap changers.

Ferranti-Packard

34.4

S

S

S

S

General Electric

34.4
43.8
115
138

S S S
S S S

Transformers 5 MVA and larger also accepted as load tap changing transformers using General Electric Types LR72, LR65 and LRT-200 load tap changers.

Hevi-Duty

34.4
43.8
67.0
115
138

S S S
S S S
S S S
S S S
S S S

Transformers 5 MVA and larger also accepted as load tap changing transformers using Westinghouse Types UTS-A and UTT-B and Siemens Allis Type TLS load tap changers.

av - Conductor, ACSR

Applicable Specification: ASTM Specification B 232

Preferred Sizes: (Larger sizes may be used where the engineer's study shows they are required.)	<u>Distribution</u>	<u>Transmission</u>
	4 - 6/1	1/0 - 6/1
	4 - 7/1	2/0 - 6/1
	2 - 6/1	3/0 - 6/1
	2 - 7/1	4/0 - 6/1
	1/0 - 6/1	266.8 kcmil - 26/7
	2/0 - 6/1	336.4 kcmil - 26/7
	3/0 - 6/1	477 kcmil - 26/7
	4/0 - 6/1	556.5 kcmil - 26/7
	266.8 kcmil 18/1	795 kcmil - 26/7
	336.4 kcmil 18/1	954 kcmil - 54/7
	477 kcmil 18/1	

The following manufacturers have shown compliance with the applicable specifications:

Alcan Cable

Aluminum Company of America

Anaconda Ericsson

Essex

Kaiser

Nehring

Noranda

Pirelli Cable

Reynolds

Southwire

NOTES

1. Conductors with 18/1 stranding have different sag characteristics than conductors with 6/1 or 26/7 stranding. This difference in sag characteristics must be taken into consideration in the line design.

2. 266.8 kcmil 26/7, 336.4 kcmil 26/7, and 477 kcmil 26/7 may be used for distribution underbuild on transmission lines.

av-2
Oct. 1985

av - Conductor, copper

Applicable Specifications: ASTM Specification B1-81 (or latest revision) for hard-drawn solid
ASTM Specification B8-81 (or latest revision) for hard drawn stranded and soft stranded
ASTM specification B3-74(80) (or latest revision) for soft or annealed solid.

Preferred Sizes:	Hard-drawn solid	4 and 6
	Soft or annealed solid	4 and 6
	Hard-drawn stranded	2x3, 1/0 x 7, 2/0 x 7
	Soft stranded	4 and 6

The following manufacturers have shown compliance with the applicable specifications:

Alcan Cable

Allied Tube & Conduit

Anaconda Power Cable

Essex

General Cable

Hatfield (Sizes 4 and 6)

Phelps Dodge

Rome Cable

Service Wire Company

Southwire

av - Conductor, Copperweld-copper

Applicable Specification: ASTM Specification B 229

Preferred Sizes:	<u>Distribution</u>	<u>Transmission</u>
	8A	1/0 F
	6A	2/0 F
	4A	3/0 F
	2A	4/0 F

The following manufacturers have shown compliance with the applicable specification for the sizes indicated:

Anaconda Ericsson	(2A and smaller)
Copperweld Steel	(All sizes)
Southwire	(2A and smaller)

av-4
Oct. 1985

av - Conductor, Service
(Single Conductor)

<u>Manufacturer</u>	<u>Aluminum</u>	<u>Copper</u>
Alcan Cable	x	x
Anaconda Power Cable	x	x
Conductor Products	x	
Essex	x	x
Kaiser	x	
Phelps Dodge	x	
Pirelli Cable	x	x
Reynolds	x	
Rome Cable	x	x
Southwire	x	x
Cablec	x	

Applicable Specification: IPCEA-NEMA Standard S-66-524

Insulation: Cross-linked thermosetting polyethylene or equal,
meeting requirements of Sections 7.3.3 and 7.3.5.

Conductor: Physically and electrically equal to MHD copper or
HD (EC-H19) aluminum, meeting requirements of Section 7.3.2.
(Compact or compressed stranded conductor is acceptable.)

Marking: Manufacturer's name and type of insulation shall be clearly
shown in durable markings on the surface of the insulation
at intervals no greater than 24 inches.

av - Conductor, Service Cable
(Triplex and Quadruplex)

<u>Manufacturer</u>	<u>Aluminum</u>	<u>Copper</u>
Alcan Cable	x	x
Allied Tube & Conduit	x	x
Conductor Products	x	
Essex	x	x
Hendrix	x	x
Kaiser	x	
Phillips Cables, Inc. (Marked "Phillips W")	x	
Pirelli Cable	x	x
Reynolds	x	
Rome Cable	x	x
Southwire	x	x

Applicable Specifications: REA Specification D-2, Specifications for
600 Volt Neutral-Supported Secondary Service
Drop Cables.

av-6
July 1985

av - Conductor, Aluminum Alloy

Applicable Specification: ASTM Specification B399

Preferred Sizes:

<u>DISTRIBUTION</u>		<u>TRANSMISSION</u>	
<u>6201</u>	<u>ACSR Equiv.</u>	<u>6201</u>	<u>ACSR Equiv.</u>
48,690 cmil - 7 str.*	4	123,300 cmil - 7 str.**	1/0
77,470 cmil - 7 str.*	2	155,400 cmil - 7 str.**	2/0
123,300 cmil - 7 str.	1/0	195,700 cmil - 7 str.**	3/0
155,400 cmil - 7 str.	2/0	246,900 cmil - 7 str.	4/0
195,700 cmil - 7 str.	3/0	312,800 cmil - 19 str.	266,800 cmil
246,900 cmil - 7 str.	4/0	394,500 cmil - 19 str.	336,400 cmil
		559,500 cmil - 19 str.	477,000 cmil
		652,400 cmil - 19 str.	556,500 cmil
		927,200 cmil - 37 str.	795,000 cmil

*Not recommended for multiphase lines with span lengths exceeding 300 ft.

**Not recommended for suspension type construction.

The following manufacturers have shown compliance with the applicable specifications:

<u>Manufacturer</u>	<u>Type</u>
Alcan	6201
Alcoa	6201
Kaiser	6201
Reynolds	6201
Southwire	6201

dt
July 1985

dt - Deadend, service

For deadending triplex type service cable, Drawing K10C.

<u>Manufacturer</u>	<u>ACSR Size</u>	<u>Wedge Type</u>	<u>Catalog Number</u> <u>Formed Type</u>
Blackburn	4	W6-4AA	-
	2	W6-2AA	-
	1/0	W2-0AA	-
Burndy	4	CW2R-1	-
Chance	4	-	CSG-030
	2	-	CSG-050
	1/0	-	CSG-070
Helical Line Products	4	-	HSG-514
	2	-	HSG-518
	1/0	-	HSG-522
Joslyn	4 & 2	R7295	-
	1/0	R7287	-
Penn-Union	4 & 2	WDC-2S	-
	1/0	WDC-10S	-
Preformed Line Products	4	-	SG-4502
	2	-	SG-4504
	1/0	-	SG-4506
Reliable	4 & 2	7295	-
	1/0	7287	-

du
Oct. 1985

du - Link, Extension

DISTRIBUTION

<u>Manufacturer</u>	<u>Catalog Number</u>
Bethea Electrical	LCE-14
Chance	C207-0112
Continental	CEL-14
Flagg (MIF)	PA319
McGraw-Edison	DC33B6
Utilities Service	495

TRANSMISSION
(25,000 lbs. min. strength)

Joslyn	J26082
--------	--------

Guy Extension Link
(For "H" Structure)

<u>Manufacturer</u>	<u>One Guy Attachment</u>	<u>Two Guy Attachment</u>
Joslyn	J22421	J26025

NOTE: The distribution extension links may be substituted for anchor shackle (Item bo), eye bolt (Item o) and eye nut (Item aa) for both small and large conductor drawings shown in REA Form 803 and REA Bulletin 50-3 at the option of the owner.

eq - Narrow Profile Barckets and Special Arm Assemblies
(See REA Bulletin 61-12)

COMBINATION INSULATORS AND BRACKETS

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
<u>Salisbury</u>	1305 (8/22/85)	1. To obtain experience.
Horizontal Post, 12.5/7.2 kV 9561		2. For use only in scenic areas and locations where right-of-way is limited.
Horizontal Post, 24.9/14.4 kV 9562		3. Not to be used where where conductor galloping may be expected.
		4. Not to be used in contaminated atmospheres.

es
July 1985

es - Splice Cover, Plastic

(For use over compression type service connections
in place of tape.)

<u>Manufacturer</u>	<u>Type</u>
Anderson/Square D	Type SEC
Blackburn	Type C
Kearney	Type 601
3M	PST Series 8400
Plastic Engineering & Sales Co.	Wire Splice Cover
Virginia Plastics	Type VP

Splice Cover and Moisture Seal for
Secondary Cable Connections (See
Drawings G312 and UM5)

<u>Manufacturer</u>	<u>Type</u>
AMP	Sealing & Dielectric Compound
Bishop	Electro-Seal
3M	Scotch Brand #2200

Bolted Connector Cover

(For use over bolted type service connections in place of tape.)

<u>Manufacturer</u>	<u>Type</u>
Fargo	GA-9000 B Series

eu
Oct. 1985

eu - Extension Link
(Fiberglass)
(Distribution)

<u>Manufacturer</u>	<u>Strength</u>	<u>Catalog Number</u>
Anderson/Square D	10,000 lbs. 15,000 lbs.	*GSB1-9 GSB2-12
Barron Bethea	11,000 lbs. 15,000 lbs.	*BB-11-EE-12 BB-15-EE-12
Bethea Electrical Products	11,000 lbs. 15,000 lbs.	FGS16EE12P FGS16EE12P
Continental	11,000 lbs. 15,000 lbs.	*GEE11-12 GEE15-12
Flagg (MIF)	11,000 lbs. 15,000 lbs.	150-12EE 150-12EE
Joslyn-Empire	15,000 lbs.	500-12EE
Plastigage	11,000 lbs. 15,000 lbs.	*HSB-1-12 HSB-2X-12

*For use with 6" suspension insulators.

fj - Bracket, extension

(For use in mounting oil circuit reclosers or sectionalizers)

See Drawing VM3-10A

	<u>Through Bolt Type</u>	<u>Band Type</u>
Aluma-Form	TBRSM-1, TB2M1-9*	RSM-1
Dixie	D-2359-M	
Joslyn	J2357M	
McGraw-Edison	DR2E3	

*For mounting double lug reclosers.

fk - Bracket, oil circuit recloser or sectionalizer

(For cluster mounting of three oil circuit reclosers on pole)

Aluma-Form	RSM-3, 6M3-9*
*McGraw-Edison	DT8C1
Turner	695-3

*Suitable for 14.4 and heavy duty 7.2 kV.

fl - Rack, primary metering

(For cluster mounting of primary metering equipment on pole)

Aluma-Form	PMM Series
Turner	3CT-PT

fm
Oct. 1985

fm - Bracket, Arrester and Pothead Extension
For Distribution Arrester and Cutout - Pole Mounting

<u>Manufacturer</u>		<u>Single Phase</u>	<u>Three Phase</u>
Aluma-Form		1HCA-18 Series	R3CA-48
Anderson/ Square D	12.5/7.2 kV 24.9/14.4 kV	COB-E-120-TGL COB-E-180-TGL	
Bethea Electrical	12.5/7.2 kV 24.9/14.4 kV	VIB3-18-R1-GC-C VIB3-18-GC	
Bethea Metals	12.5/7.2 kV 24.9/14.4 kV	AV1B3-12 AV1B3-18	
Chance		C653-1038	C653-1056
Continental	12.5/7.2 kV 24.9/14.4	IACB-12-5LGE IACB-18-5LGE	GPB-3-0-568M-3012-CAT 12 GPB-3-0-568M-4017-CAT 12
Dixie	12.5/7.2 kV 24.9/14.4 kV	D-1580 D-1583	D27211-G
Flagg (MIF)	12.5/7.2 kV 24.9/14.4 kV	PA613H PA619H	
Hughes Brothers		892-18	670-40
McGraw-Edison		DC34B3	
Power Line Hardware	12.5/7.2 kV	CA-12-3GL	
Universal Electric		SAB-3-18-GC	

For two distribution arresters in parallel or one
arrester and cutout - crossarm mounted

<u>Manufacturer</u>	<u>Catalog No.</u>
McGraw-Edison	DM23B2

For Intermediate Arrester Mounting

<u>Manufacturer</u>	<u>Single Phase</u>	<u>Three Phase</u>
Aluma-Form	WBMA-1	R3CSA-48
Bethea Electrical	12.5/7.2 kV	VIB3-18-R1-GC-C

fn - Bracket, Cutout Extension

<u>Manufacturer</u>		<u>Catalog Number</u>
Aluma-Form		1HCA-C-18
Anderson Elec./	12.5/7.2 kV	COB-E-120-TGL
Square D	24.9/14.4 kV	COB-E-180-TGL
Bethea Electrical	12.5/7.2 kV	VIB3-12F-GC
	24.9/14.4 kV	VIB3-18-GC
Bethea Metals	12.5/7.2 kV	AVIB3-12
	24.9/14.4 kV	AVIB3-18
Chance		C653-1038
Continental	12.5/7.2 kV	IACB-12-5-LGE
	24.9/14.4 kV	IACB-18-5-LGE
Flagg (MIF)	12.5/7.2 kV	PA613H
	24.9/14.4 kV	PA619H
Hughes Brothers		892-18
McGraw-Edison		DC34B1
Power Line		
Hardware	12.5/7.2 kV	CA-12-3GL
Universal Electric		SAB-3-18-GC

fo
July 1985

fo - Bracket, Transformer Secondary, Insulated

<u>Manufacturer</u>	<u>Bracket Without Insulator</u>	<u>Bracket With 2-1/4" Diameter Spool Insulator</u>	<u>Bracket With 3-1/8" Diameter Spool Insulator</u>
Chance	-	9113S	9114S
Joslyn	-	J6765-A	J6765
McGraw-Edison	DT4M1	DT4M13	DT4M11
Utilities Service	865	865/208	865/205

ga - Watthour and Watthour-Demand Meters
10. 2 and 3 wire or 2/3 wire 120/240 volts

Self-Contained Types

1 Manufacturer	2 Type of Base	3 Watthour Meter Type		4 Mechanical Demand Watthour Type		5 Thermal Demand Watthour Type		6 Number of Terminals
Duncan	Bottom Con.	-	-	-	-	-	-	-
	Socket	MS	BMS-2S	TMS				4
General Electric	Bottom Con.	I50A	IM50A	-	-	-	-	4
	Socket	I70S	IM70S	-	-	-	-	4
Sangamo	Bottom Con.	J5SA	J5DSA	-	-	-	-	-
	Socket	J5S	J5DS	-	-	-	-	4
Westinghouse	Bottom Con.	D2A	D2AM	-	-	-	-	-
	Socket	D5S	D5SM	D2SH				4

Transformer Rated Types

Duncan	Bottom Con.	-	-	-	-	-	-	-
	Socket	MS	BMS	TMS				5 or 6
General Electric	Bottom Con.	I50A	IM50A	-	-	-	-	5 or 6
	Socket	I70S	IM70S	-	-	-	-	5 or 6
Sangamo	Bottom Con.	J5SA	J5DSA	-	-	-	-	-
	Socket	J5S	J5DS	-	-	-	-	5 or 6
Westinghouse	Bottom Con.	D2A	D2AM	-	-	-	-	-
	Socket	D2S	D2SM	-	-	-	-	5 or 6

ga - Watthour and Watthour-Demand Meters

Polyphase 2 element - 3 wire, 240 volts - Delta and Network

Self-Contained Types

1 Manufacturer	2 Type of Base	3 Watthour Meter Type	4 Mechanical Demand		5 Thermal Demand		6 Number of Terminals
			Watthour Type	Watthour Type	Watthour Type	Watthour Type	
Duncan	Bottom Con.	-	-	-	-	-	-
	Socket	MT012S or 13S	BMT-12S or 13S	TMT-12S			5 or 8
General Electric	Bottom Con.	V62A	VM62A	-	-	-	5
	Socket	V62S	VM62S	-	-	-	-
Sangamo	Bottom Con.	S2A	S2DA	-	-	-	5 or 8
	Socket	S2S	S2DS	-	-	-	-
Westinghouse	Bottom Con.	-	-	-	-	-	-
	Socket	D5S5	D5S5M				

Transformer Rated Types

Duncan	Bottom Con.	MT-5A	BMT-5A	TMT-5A			8
	Socket	MT-5S	BMT-5S	TMT-5S			8
General Electric	Bottom Con.	V63A	VM63A	-	-	-	8
	Socket	V63S	VM63S	-	-	-	-
Sangamo	Bottom Con.	S3A	S3DA	-	-	-	-
	Socket	S3S	S4DS	-	-	-	8
Westinghouse	Bottom Con.	D5A-2	D5A2M	-	-	-	-
	Socket	D5S-2	D5S2M	D4S-2H			8

Conditional List
sc
July 1985

sc - Regulators, Voltage

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
<u>Siemens-Allis</u> Three-phase, step-type substation regulator Type SFR (13.2/7.62 kV)	657 (11/24/58)	To obtain experience.
<u>General Electric</u> Three-phase, step-type substation regulator Type TMLT-32 (13.2/7.62 kV)	723 (9/28/61)	To obtain experience.

sd
Oct. 1985

sd - Current Transformers
Outdoor Type

<u>Manufacturer</u>	<u>.6 kV</u>	<u>15 kV</u>	<u>25 kV</u>	<u>34.5 kV</u>	<u>69 kV</u>
Associated Engineering	GT HA WEO	BB-15 LG-15	BB-25 LG-25 COF	LG-34.5 COF	COF-350
Astra	AA TFW AB AD				
Duncan	DCBW DCCW DCAB				
Electromagnetic Industries (Square D)		C03-110	C03-150	C03-200	1K-350
General Electric	JCR-0 JCW-0 JAK-0 JAD-0	JKW-5 JCK-5	JKW-6 JKW-150 KG-150	JKW-7 JKW-200 KG-200	JKW-350 KG-350
Sangamo	R6S R6SA R6M				
Westinghouse	CSF/CMS CMF CLC/CLE	KOR-11 KON-11	ACT-150 KOR-15	ACT-200	ACT-350

NOTE: The transformer types listed above are accepted in all standard ratios. Insulation class, voltages, ratios and other necessary information should be specified when ordering.

Conditional List
sd
Oct. 1985

sd - Current Transformers
Outdoor Types

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
<u>Balteau Standard</u>		
Type KEWO-110, 15 kV	1212 (5/21/81)	To obtain experience.
Type KEWO-150, 25 kV		
Type KEWO-200, 34.5 kV		
Type KEWO-350, 69 kV		
<u>Electromagnetic Ind.</u>		
Type UMCT, 0.6 kV	1216 (7/23/81)	To obtain experience.
Type UCT, 0.6 kV		

se
Oct. 1985

se - Voltage Transformers

<u>Outdoor Types</u>					
<u>Manufacturer</u>	<u>.6 kV</u>	<u>15 kV</u>	<u>25 kV</u>	<u>34.5 kV</u>	<u>69 kV</u>
Associated Engineering	CL TL	PTT-150 SPOF-100 PTT-110	PTT-150 SPOF-150	POF-200	POF-350
Duncan	DVE-6 DVF-6				
Electromagnetic Industries		P05-110	P05-150	P05-200	U2-350
General Electric	JVA-0 JVP-0	JVW-5 JVW-110	JVW-6 ET-150 JVT-150	JVW-7 ET-200 JVT-200	ET-350 JVT-350
Sangamo	T6A T7				
Westinghouse	PPM	VOG-11 VOZ-11	PTOM-150 APT-150	APT-200	APT-350 LPT-350

NOTE: The transformer types listed above are acceptable in all standard ratios. Insulation class, voltages, ratios and other necessary information should be specified when ordering.

se - Voltage Transformers

Outdoor Types

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
<u>Astra</u>		
Type DB, 0.6 kV	1087 (4/1/76)	To obtain experience.
Type DA, 0.6 kV		
Type DF, 0.6 kV	1261 (6/23/83)	
 <u>Balteau Standard</u>		
VE02-110, 15 kV	1212 (5/21/81)	To obtain experience.
VE05-110, 15 kV		
 <u>Electromagnetic Industries</u>		
Type U-450, 0.6 kV	1080 (12/23/75)	To obtain experience.

sj
July 1985

sj - Switches, oil circuit recloser by-pass

<u>Manufacturer</u>	<u>15 kV for Use on 12.5/7.2 kV Systems</u>	<u>27 kV for Use on 24.9/14.4 kV Systems</u>	<u>Current Rating Amperes</u>
Kearney	D73RB	D73RB	600
McGraw-Edison	FW77D7	FW77D9	600

zz-2
July 1985

zz - Poles

Pressure Treatment

	<u>Insured Warranted</u>	<u>Independently Inspected</u>	<u>Quality Assurance Plans</u>
Cascade Pole Co.	--	Tacoma, WA	--
	--	Olympia, WA	Olympia, WA
Cowboy Timber Treating, Inc.	--	Manderson, WY	--
Colfax Creosoting Co.	--	Pineville, LA	--
Conroe Creosoting Co.	--	Conroe, TX	--
Crown Zellerbach Corp.	--	Gulfport, MS	Gulfport, MS
	--	Mobile, AL	--
	--	Urania, LA	Urania, LA
	--	Sallisaw, OK	--
Dant & Russell, Inc.	--	North Plains, OR	--
Davis Timber Co., Inc.	--	Hattiesburg, MS	Hattiesburg, MS
Durable Wood Preservers, Inc.	--	Charlotte, NC	--
Eppinger and Russell	--	Chesapeake, VA	--
Escambia Treating Co.	--	Brunswick, GA	Brunswick, GA
	--	Pensacola, FL	--
	--	Camilla, GA	Camilla, GA
	--	Brookhaven, MS	Brookhaven, MS
Fernwood Industries	--	Fernwood, MS	Fernwood, MS
Fordyce Wood Treaters, Inc.	--	Fordyce, AR	--
Garland Creosoting Co.	--	Longview, TX	--
General Wood Preserving Co., Inc.	--	Leland, NC	--
Hart Creosoting Co.	--	Jasper, TX	--
Hoosier Treating Co.	--	Gosport, IN	Gosport, IN
Huxford Pole & Timber Co., Inc.	--	Huxford, AL	--
Idaho Pole Co.	--	Bozeman, MT	Bozeman, MT
Hydrolake Leasing & Service Service Co.	--	McBain, MI	McBain, MI
International Paper Co. Wood Preserving Division	--	De Ridder, LA	--
	--	Joplin, MO	Joplin, MO
	--	Navasota, TX	--
	--	*Wiggins, MS	*Wiggins, MS

*Cellon process also accepted.

zz-3
Oct. 1985

zz - Poles

Pressure Treatment

	<u>Insured Warranted</u>	<u>Independently Inspected</u>	<u>Quality Assurance Plans</u>
Jasper Creosoting Co.	--	Jasper, TX	--
Kerr-McGee Chemical Corp. Forest Prod. Division	--	Meridian, MS	Meridian, MS
	--	Columbus, MS	--
	--	Texarkana, TX	--
Koppers Co., Inc.	--	Carbondale, IL	--
	--	*Denver, CO	--
	--	Florence, SC	Florence, SC
	--	Gainesville, FL	Gainesville, FL
	--	Grenada, MS	--
	--	Houston, TX	--
	--	*Montgomery, AL	*Montgomery, AL
	--	N. Little Rock, AR	--
	--	*Oroville, CA	--
	--	Galesburg, IL	--
Lake States Wood Preserving, Inc.	--	Munising, MI	Munising, MI
Langdale Co.	--	Sweetwater, TN	Sweetwater, TN
	--	Valdosta, GA	Valdosta, GA
Lockhart Lumber Co.	--	Lockhart, AL	--
Lufkin Creosoting Co.	--	Lufkin, TX	--
MacGillis & Gibbs	--	Madera, CA	--
McCormick & Baxter Creosoting Co.	--	*Portland, OR	--
	--	*Stockton, CA	--
McCranie Brothers Wood Preserving Co.	--	Willacoochee, GA	--
L. D. McFarland Co.	--	Eugene, OR	Eugene, OR
Marion Pressure Treating Co.	--	Marion, LA	--
William C. Meredith Co.	--	Atlanta, GA	--
T. R. Miller Mill Co., Inc.	--	Brewton, AL	--
Montana Pole & Treating Plant	--	Butte, MT	--
Niedermeyer-Martin Co. (Pacific Wood Treating Corp.)	--	Ridgefield, WA	--
Oeser Cedar Co.	--	Bellingham, WA	--

*Cellon process also accepted.

U ae - Arresters, Surge

(For underground system pole risers or pad-mounted equipment)

(Shielded for Underground System Pad-Mounted Equipment)

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
<u>Joslyn</u>		
Metal Oxide, Elbow Arrester Type ZE, 10, 18 kV	1297 4/11/85	To obtain experience.
<u>McGraw-Edison</u>		
Metal oxide, AMOV1 U.D. 10, 18 kV	1223 11/19/81	To obtain experience.
<u>RTE</u>		
Metal Oxide Elbow Arrester M.O.V.E. 9, 18 kV	1185 4/24/81	To obtain experience.

(For Underground System Pole Risers)

<u>General Electric</u>		
Metal Oxide, Tranquell** U.D. II 9, 10, 18 kV	1292 1/10/85	To obtain experience.
Metal Oxide, Tranquell Intermediate Class 9, 10, 18 kV	1197 10/9/80	To obtain experience.
<u>Joslyn</u>		
Metal Oxide, Type ZJ U.D. 9, 10, 18 kV	1266 9/22/83	To obtain experience.
Metal Oxide, Type ZR Intermediate Class* 9, 10, 18 kV	1266 9/22/83	To obtain experience.
Metal Oxide, Elbow Arrester Type ZE, 10, 18 kV	1297 4/11/85	To obtain experience.
<u>McGraw-Edison</u>		
Metal Oxide, AVZ 1B 9/10, 18 kV	1223 11/9/81	To obtain experience.
Metal Oxide AZR Intermediate class 10, 18 kV	1287 9/27/84	To obtain experience.
<u>Ohio Brass</u>		
Metal Oxide, DynaVar VR UD 9, 10, 18 kV	1236 6/10/82	To obtain experience.
Metal Oxide, DynaVar Intermediate Class 9, 10, 18 kV	1236 6/10/82	To obtain experience.

*Has intermediate class arrester characteristics but does not have intermediate class venting capability.

**A non fragmenting U.D. II Arrester is available for 9 & 10 kV designs at higher cost when specified.

U an-1.1
July 1985

U an - Transformers, distribution
pad-mounted, dead-front

(For underground application)

Applicable Specifications: "REA Specifications for Pad-Mounted
Transformers," U-5.

<u>Manufacturer</u>	<u>Single Phase</u>	<u>Three-Phase</u>
Central Moloney (2, 4)	"REA-LP" 25-167 kVA	
Dowzer (3, 4)	"METRI-PAD" 25-167	"PM3W-R" 75-500 KVA
ERMCO (1) (4, 6) (2, 4)	"Trimline" 10-50 kVA "Low-Profile" 10-50 kVA "Low-Profile" 75 kVA	
General Electric (2, 4)	"Mini-Pad III - REA" 10-167 kVA	"Compad II - REA" 75-2500 kVA
Howard (2, 4)	"Hi Pad REA" 10-167 kVA	"Hi Pad 3 REA" 45-2500 kVA
Kuhlman (2, 4)	"Lo-Pak ALR" 25-167 kVA	
McGraw-Edison (2, 4)	Series 20/20 REA 25-167 kVA	"REA Pad-Mount" 75-2500 kVA
NECO/Hammond (2)	HMM-R, 10-50 kVA SP-R, 75-167 kVA	TP-R, 45-1000 kVA
Pauwels-Chance(2)	"Turf-Hugger-R" 10-100 KVA	"Turf-hugger-R" 45-500 KVA
H. K. Porter (2, 4) (Delta-Star)	"Low Profile U 5-R" 25-167 kVA	"Porter U5-R3" 225-2500 kVA
RTE (2, 4)	"REA Shrubline" 15-167 kVA	"REA Terra-Tran" 45-2500 kVA
United (Ky, AEC)(2, 4)	"Pad-Mount" 15-75 kVA	

- (1) 7.2/12.5 and 7.6/13.2 kV
- (2) 7.2/12.5, 7.6/13.2 and 14.4/24.9 kV
- (3) 7.2/12.5 and 7.6/13.2 kV (conditional listing for 14.4/24.9 kV)
- (4) Dual Voltage - Same as for 14.4/24.9 kV, single phase
- (5) Three-phase listing applies to 7.2/12.5 and 7.6/13.2 kV only
- (6) 14.4/24.9 kV

U gk - Terminations, outdoor
(with mounting hardware)*

(when ordering, specify conductor size, type whether
copper or aluminum, insulation diameter, and type of
mounting desired.)

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
Elastimold (ESNA)	921 (6/26/69)	To obtain experience.
Style 16-THG (15 and 25 kV)	945 (6/11/70)	
Style 35-MT (35 kV)	1098 (9/23/76)	
General Electric	938 (3/5/70)	To obtain experience.
Termi-Matic, Type G	914 (3/20/69)	
(15, 25 and 35 kV)	1083 (2/5/76)	
Joslyn		
"Easy-On II"	1111 (3/31/77)	To obtain experience.
(15, 25 and 35 kV)		
3M		
5900 Series	966 (5/6/71)	To obtain experience.
15 kV (4/0 AWG and larger)	969 6/17/71	
25 kV (#2 AWG thru 750 kcmil)		
"Quick-Term" 5800 Series	1054 (11/27/74)	
bracket mounted,		
15 kV (#2 AWG thru 3/0 AWG)		
MT Series	1083 (2/5/76)	
15 kV (4/0 AWG and larger)		
25 kV, 35 kV		
"Quick-Term II" Series	1238 (7/15/82)	
(15, 25 and 35 kV)		
Blackburn		
Type MT (15, 25 and	1304 (8/8/85)	To obtain experience.
35 kV)		

*Mounting hardware is used to attach termination to mounting bracket (U hd or U hj).

Conditional List
U gk(1.2)
July 1985

U gk - Terminations, Outdoor
(With Mounting Hardware)*

(When ordering specify conductor size, type, whether
copper or aluminum, insulation diameter, and type
of mounting desired)

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
<u>Raychem</u> Thermofit HVT (15, 25 and 35 kV)	1054 (11/27/74)	To obtain experience.
<u>Bishop</u> SWO Kit (15, 25 and 35 kV)	1109 (3/3/77)	To obtain experience.
<u>G & W</u> "Eliminator" 15 kV, E 25 kV, E 35 kV, E	1150 (11/2/78) 1166 (6/21/79) 1251 (1/20/83)	To obtain experience.
<u>RTE</u> Fasterm Series (15 & 25 kV)	1162 (4/26/79)	To obtain experience.
<u>Sigmaform</u> Q-Cap Series STK (15 & 25 kV)	1212 (5/21/81)	To obtain experience

*Mounting Hardware is used to attach termination to mounting bracket (U hd or U hj).

U gp-1
Oct. 1985

U gp - Connector Blocks and Splices, Secondary
Watertight - For Use In All Locations

<u>Manufacturer</u>	<u>Connection Type</u>	<u>Catalog Number</u>
Alcoa	Lug	Interchange-I ABB Series Use with A-9 insulating boots
Alcon	Set Screw	VPB Series
AMP	Compression	600 Volts secondary UG Distribution 4-way and 6-way bus system
Blackburn	Lug	Series UP(with lugs and sleeves)
	Set Screw	Series UB(1000 amp bus with sleeves)
Burndy	Lug	URD Mole
Connector Mfg. Co.	Compression	Utilug Sure Seal Splice Kits series SSK, SSKL
Electrical Spec. Prod.	Lug	Type UC (8 AWG - 500 kcmil) (with LA lug and sleeve)
	Set Screw	Type UB (with sleeve) splice Type ACL-HSH (6 AWG - 500 kcmil)
Fargo	Set Screw	GU-500 Series
Homac	Lug	FS-95 Series with flood seal sleeve kit (8AWG - 350 kcmil)
	Lug	FS-125 Series with flood seal sleeve kit (350 - 500 kcmil)
	Set Screw	SHC Series
	Set Screw	RAB Series
Kearney	Compression	HCR
	Compression	HAR
Penn Union	Lug	DBA Series with DBTB, DBTBF and DBTH Series lug and sleeve kits
Reliable	Set Screw	15903-15908, 15910 with sleeve kit (4 AWG - 350 kcmil) 15911 with sleeve kit (500 - 750 kcmil)
RTE	Compression	Aqua Guard Splice Kit
Utilco	Set Screw	Safety Sub Splice - USPA-350SS

U gp-2
Oct. 1985

U gp - Connector Blocks and Splices, Secondary

<u>Non-Watertight - For Use In Above-Grade Pedestals Only</u>		
<u>Manufacturer</u>	<u>Connection Type</u>	<u>Catalog Number</u>
Blackburn	Set Screw	Type PSB-C
Electrical Spec. Prod.	Set Screw	UP-B Series
Fargo	Set Screw	GUS-200 Series
Homac	Set Screw	CLR-350 Series
	Set Screw	PVAB Series
Utilco	Set Screw	PED-350-IN Series

Conditional List
U hp(3)
July 1985

U hp - Terminations, Elbow*

(When ordering specify conductor size, type, whether
copper or aluminum and insulation diameter)

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
RTE		
15 kV Loadbreak SBT IV	1122 (9/8/77)	To obtain experience.
2604000B Series with test point		
2603999B Series without test point		
15 kV Non-loadbreak	1148 (9/28/78)	
2625166B Series		
2625175B Series		
2525175B Series		
25 kV Loadbreak SBT	1032 (12/20/73)	
2604381B Series with test point		
2604400B Series without test point		
35 kV Loadbreak SBT	1048 (8/22/74)	
2603922B Series with test point		
2604006B Series without test point		

*NOTE: Non-loadbreak devices require that connections be made in non-energized
conditions only.

For application of loadbreak elbows on three-phase systems, refer to REA
Bulletin 61-15 dated June 1974.

Conditional List

U hp(4)

Oct. 1985

U hp - Terminations, Elbow
(rated for switching on three-phase systems)

(When ordering, specify conductor size, type, whether
copper or aluminum and insulation diameter)

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
<u>Kearney</u>		
15 kV, Loadbreak with voltage test point	1005 (12/7/72)	To obtain experience.
1115-FC Series	1077 (11/13/75)	
<u>RTE</u>		
15 kV, Loadbreak SBT IV 2604600B Series with test point	1032 (12/20/73)	To obtain experience.
2604599B Series without test point	1122 (9/8/77)	
25 kV, Loadbreak SBT 2604740B Series with test point	1148 (9/28/78)	
2604741B Series without test point		
<u>Elastimold (ESNA)</u>		
15 kV, Loadbreak without voltage test point	1068 (6/26/75)	To obtain experience.
Style 165-LR		
15 kV, Loadbreak with voltage test point		
Style 166-LR		
25 kV, Loadbreak without voltage test point		
Style 271-LR		
25 kV, Loadbreak with voltage test point		
Style 272-LR		
<u>General Electric</u>		
15 kV, Loadbreak 9U01A--4--Series	1133 (2/16/78)	To obtain experience.
25 kV, Loadbreak 9U01B--5--Series		
<u>Blackburn</u>		
15 kV, Loadbreak JT2B (without test point)	1054 (11/27/74)	To obtain experience.
25 kV Load Break JT2C (without test point)	1304 (8/8/85)	To obtain experience.
JT2CT (with test point)		

U hv - Cable, Underground
15 kV Cable

Applicable Specification: REA Specification U-1
Conductor :Copper or Aluminum
 #2 AWG through 1000 kcmil
Insulation :High Molecular Weight (HMW) or Crosslinked (XL)
 Polyethylene or Ethylene Propylene Rubber (EPR)
Neutral :Copper Concentric Neutral

<u>Manufacturer</u>	<u>Insulation</u>	<u>Flat Strap Neutral Available</u>	<u>Stabilized Neutral Design*</u>
Cablec	XL	Yes	
Conductor Prod.	HMW or XL	Yes	Ridg-lok
Essex	XL	Yes	R-LOK
Hendrix	HMW, XL or EPR	No	Neu-lok
Okonite	XL or EPR	Yes	
Pirelli	HMW or XL	Yes	STA-SERVE
Reynolds	HMW or XL	Yes	Secure-Neutral
Rome	XL or EPR	Yes	Serve-Lock Counter Secure
Southwire	XL	No	

*Accepted design meeting the requirements of paragraph 7.5.2. of REA Specification U-1, for a minimum neutral with a maximum lay.

U hv-2
Oct. 1985

U hv - Cable, Underground
25 kV Cable

Applicable Specification: REA Specification U-1
Conductor : Copper or Aluminum
 #1 AWG through 1000 kcmil
Insulation : High Molecular Weight (HMW) or Crosslinked (XL)
 Polyethylene or Ethylene Propylene Rubber (EPR)
Neutral : Copper Concentric Neutral

<u>Manufacturer</u>	<u>Insulation</u>	<u>Flat Strap Neutral Available</u>	<u>Stabilized Neutral Design*</u>
Anaconda Power Cable	XL	No	
Cablec	XL	Yes	
Conductor Prod.	HMW or XL	Yes	Ridg-lok
Essex	XL	Yes	R-LOK
Hendrix	HMW, XL or EPR	No	Neu-lok
Okonite	XL or EPR	Yes	
Pirelli	HMW or XL	Yes	STA-SERVE
Reynolds	HMW or XL	Yes	Secure-Neutral
Rome	XL or EPR	Yes	Serve-lock Counter-Secure
Southwire	XL	No	

*Accepted design meeting the requirements of paragraph 7.5.2. of REA Specification U-1, for a minimum neutral with a maximum lay.

U hv - Cable, Underground

600 Volt Cable

Applicable Specification: REA Specification U-2
Conductor : Copper, #4 AWG and larger
Aluminum, #2 AWG and larger
Insulation : Cross-Linked polyethylene (XLPE)

<u>Manufacturer</u>	<u>Type Conductor</u>
Alcan	Copper or Aluminum
Anaconda Power Cable	Copper or Aluminum
Cablec	Copper or Aluminum
Collyer	Copper or Aluminum
Conductor Products	Aluminum
Essex	Copper or Aluminum
General Electric	Copper or Aluminum
Hatfield	Copper
Kaiser	Aluminum
Okonite	Copper or Aluminum
Phelps Dodge	Copper or Aluminum
Phillips Cables, Inc. (Marked "Phillips W")	Copper or Aluminum
Pirelli	Copper or Aluminum
Reynolds	Copper or Aluminum
Rome Cable	Copper or Aluminum
Southwire	Copper or Aluminum

NOTE: The manufacturers shown above have indicated that their 600 volt cable is suitable for use on 480 volt corner grounded delta circuits.

The above cable may be supplied with UL label for Type USE.

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U hv - Cable, Underground

600 Volt Multi-Conductor Cable

Applicable Specification: REA Specification U-2
Conductor : Copper, #4 AWG and larger
Aluminum, #2 AWG and larger
Insulation : Cross-Linked polyethylene (XLPE)
Cable Configuration : 3 Insulated Conductors Triplexed

<u>Manufacturer</u>	<u>Type Conductor</u>
Alcan	Copper or Aluminum
Anaconda Power Cable	Copper or Aluminum
Conductor Products	Aluminum
Essex	Copper or Aluminum
General Electric	Copper or Aluminum
Hatfield	Copper
Kaiser	Aluminum
Okonite	Copper or Aluminum
Phillips Cables, Inc. (Marked "Phillips W")	Copper or Aluminum
Pirelli	Copper or Aluminum
Reynolds	Copper or Aluminum
Rome Cable	Copper or Aluminum
Southwire	Copper or Aluminum

The above cable may be supplied with UL label for Type USE.

U hv - Cable Underground
15 kV and 25 kV Concentric Neutral Jacketed Cable

Applicable Specification: REA Specification U-1
Conductor : Copper or Aluminum
For 15 kV Cable, #2 through 1000 kcmil
For 25 kV Cable, #1 through 1000 kcmil
Insulation : High Molecular Weight (HMW) or Crosslinked (XL)
Polyethylene or Ethylene Propylene Rubber (EPR)
Neutral : Copper Concentric Neutral
Jacket : High Molecular Weight (HMW) Polyethylene

<u>Manufacturer</u>	<u>Insulation</u>
Cablec	XL
Conductor Products, Inc.	HMW or XL
Essex	XL
Hendrix	HMW or XL
Okonite	XL or EPR
Pirelli	HMW or XL
Reynolds	HMW or XL

NOTE: For grounding purposes insulated jacketed cables must be treated like overhead lines, i.e., at least four ground rods must be installed per mile in accordance with the NESC. (This does not include service grounds, etc., but does include equipment grounds.) Additional grounding may be necessary in soils with higher resistivity. In splices or tap connections, a good seal should be achieved to exclude moisture.

It is recommended that any place that the jacketing is cut (including the connections to ground rods), it be done above ground in a pedestal.

Conditional List
U hv(1)
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U hv - Cable, Underground
(15 or 25 kV cable)

TREE RETARDANT

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
<u>Conductor Products</u>		
DFDA 6202 HMW	1148 (9/28/78) 1198 (10/23/80) 1274 (1/9/84)	To obtain experience
UCAR TR-4202 XL	1293 (1/24/85)	To obtain experience
<u>Essex</u>		
DFDA 6202 HMW	1236 (6/10/82)	To obtain experience
UCAR TR-4202 XL	1293 1/24/85	To obtain experience
<u>Hendrix</u>		
DFDA 6202 HMW	1151 (11/16/78) 1198 (10/23/80)	To obtain experience
HFDE-4202 (XL)	1281 (5/31/84)	To obtain experience
<u>Pirelli</u>		
DFDA-6202 HMW	1152 (12/7/78) 1202 (12/18/80)	To obtain experience
UCAR TR-4202(XL)	1288 (10/18/84)	To obtain experience
<u>Reynolds</u>		
Reynotree-U (DFDA-6202 HMW) HEFD-4202 (XL)	1151 (11/16/78) 1196 (9/18/80) 1255 (3/24/83) 1258 (5/5/83)	To obtain experience
<u>Rockbestos Company</u>		
HFDA-4202 (XL)	1279 (5/3/84)	To obtain experience
<u>Rome Cable</u>		
UCAR TR-4202 (XL)	1279 (5/3/84)	To obtain experience
<u>Southwire</u>		
UCAR TR-4202 EC XL	1284 (8/2/84)	To obtain experience

U hy - Splice, Underground, Permanent

(when ordering, specify conductor size, type, whether
copper or aluminum and insulation diameter)

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
<u>AMP</u>		
"AmpactSplice" (35 kV)	1126 (11/3/77)	To obtain experience
<u>Elastimold (ESNA)</u>		
Style 1500S, straight splice, through #1/0 (15 kV)	1135 (3/23/78)	To obtain experience
Style 25-S, straight splice, #2/0 through #4/0 (15 kV)	1135 (3/23/78) 873 (7/27/67)	
Style 25-Y, Y-splice (15 kV)	921 (6/26/69)	
Style K-25-S, straight splice (25 kV)		
Style K-25-Y, Y-splice (25 kV)		
Style M-250-S, straight splice (35 kV)	1134 (3/2/78)	
<u>Blackburn</u>		
Type S4B (15 kV)	1160 (3/29/79)	To obtain experience
Type S4C (25 kV)		
<u>Joslyn</u>		
Type PMS152 Straight Splice (15 kV) #4 through #1/0	1251 (1/20/83) 1296 (3/28/85)	To obtain experience
<u>3M</u>		
Quick Splice II 5411, 5412 (15 kV) (#2 Awg thru #4/0 Awg)	1194 (9/4/80)	To obtain experience
"Quick Splice"	969 (6/17/71)	
5400 Series (15 kV)	1024 (8/30/73)	
(250 kcmil thru 750)	1032 (12/20/73)	
5420 Series (25 kV)		

Conditional List
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U hy - Splice, Underground, Permanent

(When ordering specify conductor size, type, whether
copper or aluminum and insulation diameter)

<u>Manufacturer</u>	<u>Meeting No. and Date</u>	<u>Conditions</u>
<u>General Electric</u> 15 kV Straight Splice through #1/0, Model 9U16A_100 (15 kV)	1255 (3/24/83)	To obtain experience.
"Uni-Matic" Through #2/0, Model 9U06A (15 kV)	977 (10/14/79)	
"Uni-Matic" Through #2/0, Model 9U06A (25 kV)	977 (10/14/79)	
<u>Raychem</u> HVS 1510-R____ 200 Amp Splice kit	1275 (3/1/84)	To obtain experience.
<u>RTE</u> 15 kV - S15Z200 Series straight splice (#2 thru #4/0 solid or compacted)	1304 (8/8/85)	To obtain experience
15 kV - 2606780A Series straight splice (4/0 stranded)	1122 (9/8/77)	To obtain experience.
25 kV - 2606825A Series straight splice		
35 kV - 2603934B Series straight splice	1058 (2/6/75)	
<u>Somerset</u> Straight splices Style 15 DHS (15 kV) Style 25 DHS (25 kV) Style 35 DHS (35 kV)	1014 (4/12/73)	To obtain experience.